

REMARKS

Applicant respectfully requests consideration of the subject application as amended herein. This Amendment is submitted in response to an Office Action mailed on September 25, 2003. Claims 1-9 are rejected. Claim 9 has been amended to correct an informality. No new matter has been added.

35 U.S.C. § 112, first paragraph

The Examiner rejected claim 4 under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. (Claims 5-7 are rejected because they depend from the rejected claim and raise the same concern).

The Examiner has a concern of how a one line scanner 98 can take images of all substrates.

As discussed in the disclosure, the line scanner 98 has a lens 100 that can focuses on a line represented by the point 102 in Figure 12 and extending into the paper. The lens 100 simultaneously focuses on a line across upper surfaces of the substrates. The lens 100 thus can focus on an image of all the substrates aligned in the line represented by the point 102. (See, for example, Specification, page 11 [0046]).

In addition, the substrates move simultaneously past the image recording device as the test chuck 32, which supports all of the substrates, moves in the direction 96 (Figures 11-12). As stated in the disclosure at [0047] page 11, (with emphasis added)

the lens 100 begins to focus on an upper surface of the substrates 56 while it is still located over the transfer chuck 26 and as it moves off the transfer chuck 26. The lens 100 simultaneously focuses on a line across upper surfaces of the substrates 56A-C in a similar manner. A one-dimensional image of the upper surface of each substrate 100 is taken along the line represented by the location 102, and provided by the line scanner 98 to an image capture device such as memory of a digital camera. Movement of the substrates 56 in the direction 96 moves the line represented by the location 102 across upper surfaces of the substrates 56 so that two-dimensional areas

of the upper surfaces of the substrates 56 are scanned. A computer knows the speed at which the test chuck 32 moves in a direction 96 so that a two-dimensional image of the upper surfaces of each of the substrates 56 is rendered by logic of the computer.

Thus, as discussed, the line scanner 98 and the lens 100 can take images of all substrates present in the line 102. This line scanner 98 is similar to existing, known line scanners which capture a row of points along the line.

Therefore, Applicant respectfully submits that claims 4 and 5-7 complied with the written description requirement.

35 U.S.C. § 112, second paragraph

Claims 1-9 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The Examiner is not clear as to the relation between the elements “terminals” and “contacts.” The terminals 110 are terminals on the dies 108 of the substrate 56. The contacts 38 are contacts of the electric tester 40. When the substrate is in the proper position, the terminals 110 contact the contacts 38 as shown in Figures 13-15 and as discussed in the disclosure at page 13 [0051]. The contact between the contacts 38 and the terminals 110 allows for the circuit testing of the circuit on the substrate 56.

Therefore, Applicant respectfully submits that claims 1-9 complied with the 35 U.S.C. § 112, second paragraph requirement.

35 U.S.C. § 102(b)

Claims 1 and 8 are rejected under 35 U.S.C. § 102(b) as being anticipated by

Fujihara, et al., (U.S. Patent No. 5,410,259, hereinafter “Fujihara”).

Applicant respectfully submits that Fujihara does not anticipate claim 1. Fujihara did not disclose each and every element of claim 1.

Fujihara did not teach the element “recording an image of a surface of each of the substrates.” Fujihara only dealt with one substrate at a time. Applicant’s claims 1 pertains to recording images of surfaces of a plurality of substrates substantially simultaneously. The camera system of Fujihara was described as one used to detect position and height of the substrate to be tested so that probe needles can be properly brought into contact with the chip pads on the substrate. The camera was not used, intended to be used, or even suggested to be used for taking an image of a plurality of substrates. There was no indication in Fujihara that an image of the surface of a plurality of substrates is ever taken or suggested that it should be taken wherein these substrate were substantially simultaneously transferred from the transfer apparatus to a test chuck. As stated in Fujihara, the position of the chip formed on the substrate is detected by the ITV camera according to conventional method. In addition, all of the figures in Fujihara showed only that the camera is situated on the side of the substrate. Fujihara thus did not disclose a camera for the purpose of taking an image or scanning of the surfaces of the substrates across several substrates to record an image for each substrate wherein these substrate were substantially simultaneously transferred from the transfer apparatus to a test chuck. As can be seen Fujihara did not even anticipate the need for recording the surface image of a substrate not to mention surface images of several substrates wherein these substrate were substantially simultaneously transferred from the transfer apparatus to a test chuck.

With regard to claim 8, Fujihara did not disclose the element of “moving the test chuck so that the substrates move past an image recordation device to record the image of

the surface once only before moving the terminals into contact with the contacts (of a tester). In Fujihara, the substrate did not move past the camera 12 for image recording. In fact, there was no recording of any images. The substrate is loaded on the chuck 4 and then the camera 12 in the alignment unit is used to detect the position of the substrate. Thus, Fujihara did not disclose the elements of claim 8

Therefore, Applicant respectfully submits that Fujihara cannot anticipate claims 1 and 8.

35 U.S.C. § 103(a)

Claims 4, 7, and 9 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Fujihara as applied to claim 1 above, and further in view of DeHaven, et al. (U.S. Patent No. 5,701,666).

Even if DeHaven disclosed the testing of a plurality of substrates, DeHaven and Fujihara cannot make obvious claims 4, 7, and 9. None of these references discussed the need or desire for taking an image of the surface of the substrate or several substrates simultaneously. Even if one modified Fujihara to include a plurality of substrates as suggested by DeHaven, neither DeHaven or Fujihara discussed a line scanner with a lens that can take the image of several substrate along one line or images of several substrates along one line.

Claims 2, 3, 5 and 6 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Fujihara as applied to claim 1 above, and further in view of Official Notice.

Applicant respectfully disagrees with the Examiner with regard to the Official Notice that the image being recorded while moving off the transfer chuck being an obvious design choice. There is no fact to suggest that recording an image before or during the moving of

the substrates off the transfer chuck being a design choice as the Examiner argued.

As discussed in Applicant's disclosure, the line image of the substrates is taken twice to form a two dimensional image. The image is taken once when the substrates are still on the transfer chuck. Another image is taken, (scanned) when the substrates move in the direction 96 as they leave the transfer chuck. First, "a one-dimensional image of the upper surface of each substrate 100 is taken along the line represented by the location 102, and provided by the line scanner 98 to an image capture device such as memory of a digital camera." (See, for example, page 11, [0047]). This image is taken while the substrate has not moved off the transfer chuck. The location of the lens 100 with respect to the transfer chuck is such that the lens can record the image of the substrate(s) while the substrates are on the transfer chuck. For example, as discussed,

the lens 100 focuses on a line represented by a point 102 in Figure 12 and extending into the paper. The line represented by the point 102 is located approximately 2cm to the left of a location 104 where the substrates 56 leave the transfer chuck 26, as measured in the direction 96. One of the substrates 56 is approximately 20cm long as measured in the direction 96.

(See for example, page 11, [0046]).

Second, movement of the substrates 56 in the direction 96 moves the line represented by the location 102 across upper surfaces of the substrates 56 so that two-dimensional areas of the upper surfaces of the substrates 56 are scanned." (See, for example, page 11, [0047]). Then, "a computer knows the speed at which the test chuck 32 moves in a direction 96 so that a two-dimensional image of the upper surfaces of each of the substrates 56 is rendered by logic of the computer." (See, for example, page 11, [0047]).

Thus, one advantage of taking an image while the substrates have not moved off the transfer chuck is that it allows for a second image to be scanned as the line represented by the location 102 moves across the upper surfaces of the substrates (as when the substrates

are being moved off the transfer chuck) so that two-dimensional areas of the substrate surfaces are scanned.

In any event, as discussed above, Fujihara did not teach the element "recording an image of a surface of each of the substrates." Thus, combining Fujihara with the Official Notice, which the Applicant disagrees with, could have not made claims 2, 3, 5 and 6 obvious since neither Fujihara nor the Official Notice suggested, taught, or even motivated recording an image of the surface of a substrate(s) with a line scanner before and/or after the substrates move off the transfer chuck.

If the Examiner finds any remaining impediment to the prompt allowance of these claims that could be clarified with a telephone conference, the Examiner is respectfully to contact Mimi Diemmy Dao at (408) 720-8300.

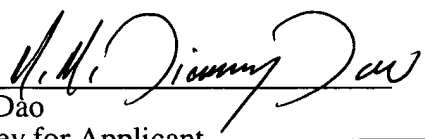
Deposit Account Authorization

Authorization is hereby given to charge our Deposit Account No. 02-2666 for any charges that may be due.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP

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